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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,985	09/20/2001	Shekhar Ambe	108339-00030	9886
4372	7590	05/17/2005	EXAMINER SHAH, CHIRAG G	
ARENT FOX PLLC 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			ART UNIT 2664	PAPER NUMBER

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/955,985

Applicant(s)

AMBE ET AL.

Examiner

Chirag G. Shah

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 5 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1 of 1.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Abstract*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because lines 4 and 7 use the legal phraseology "said", which should be avoided. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 6 recite the limitation "an incoming data packet" in lines 6 and 5 respectively. There is insufficient antecedent basis for this limitation in the claim. The reason is claims 1 and 6 recite earlier in lines 3 and 2 respectively of "an incoming data packet."

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2664

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2 and 6-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Coden (U.S. Patent No. 6,154,462) in view of Breyer et al. (Switched, Fast and Gigabit Ethernet”, XP002199222”), hereinafter referred as Breyer.

Regarding claims 1 and 6, Coden discloses in **fig. 1** of a method of handling data packets in a series of network switches [**network switches connected in series 104-1 to 104-M via ring network as in fig. 1**], said method comprising the steps of:

receiving (at port within ring switch) an incoming data packet at a data port of a first switch of said series of network switches [**as disclosed in fig. 1; col. 3, line 35-37; col. 9, lines 19-35 and col. 10, lines 46-51, the first ring interface reads the source address as it enters port of the first ring**];

resolving (within the ring switch) a stack tag from a header of said incoming data packet [**as disclosed in col. 9, lines 35-53, when a packet enters a ring switch an identification number (a stack count is set) is appended, pre-pended or added to the packet. Thus, each subsequent ring resolves (a stack) tag from a header of the incoming packet that includes an identification number with a counter received from a previous switch. The packet header also includes a destination address (as suggested col. 9, lines 21-23) and a source address (as suggested in col. 9, line 59-65). Each ring which has processed the packet increments the counter for the packet and each subsequent ring switch resolve the stack tag for the header of the incoming packet having identification number counter along with source and destination address. The**

Art Unit: 2664

(stack tag) having destination address received from a header of the incoming data packet is used for determining by comparing with address tables where to switch the data packet as suggested in col. 11, lines 9-16];

determining (within the ring switch) whether an incoming data packet is a unicast packet, a multicast packet or an IP multicast packet [as disclosed in col. 3, lines 40-56 and col. 11, lines 32-44, *a determination is made whether the port is a unicast, broadcast, multicast with higher level TCP/IP protocol. Note: a determination of a broadcast or a multicast packet is made upon consulting the memory tables and the location of the terminal is unknown*]; and

to search the address resolution lookup and layer three IP lookup tables to find an egress port for said incoming data packet [as disclosed in col. 11, lines 9-16 and fig.2, *the method determines whether the destination address of the incoming data packet is in the address tables for any port of the ring switch. If the destination address is in one of the at least one address tables, the method switches the data packet from the ring-in port to the port (egress) indicated in the address table, resolving the destination address with the (ring egress) port. This clearly establishes that the switch of fig. 1 is configured to search the address tables for performing an address resolution lookup based on the corresponding destination address to find an egress port*];

(each subsequent ring switch of fig. 1) modifies the header of said incoming packet [as disclosed in col. 9, lines 35-53, *when a packet enters a ring switch from a port, an identification number of the ring switch is appended, pre-pended or added to the packet*];

(a ring switch of fig. 1) forward the incoming data packet to at least a second switch of the series of network switches [as disclosed in col. 6, lines 1-6 and see fig. 1, *data packet received at the at least one ring port that are not destined for a network device associated with any of the at least one local ports of the ring switch are switched/forwarded to another ring switch coupled to the at least one ring port based on the address tables*], on a stacked connection operating at a first data rate [as disclosed in col. 8, lines 9-34, *Ethernet switches may operate on 1, 10, 100 Mbps or any future data rate*], based on stack tag and the egress port [*stack tag includes destination address and identification number (for the ring switch) corresponding to incoming packet as disclosed in col. 9, lines 35-53 and col. 11, lines 10-16 and egress port is determined based on looking up the address tables for the destination address of the incoming packet for forwarding to the (egress port) as disclosed in col. 11, lines 10-16*].

(each subsequent ring switch of fig. 1) remodifying the header of said incoming packet when the egress port is one of a series of data ports of a particular switch of said series of switches [as disclosed in col. 9, lines 35-53, when a packet enters a ring switch from a local port, an identification number for the ring switch is appended, pre-pended or added to the packet; an identification number for the ring is added to the packet when packets are received at the ring interface of a ring switch, *Note: col. 9, lines 45-53 clearly discloses that a counter is appended to the packet at its originating ring switch, each subsequent ring switch in the network that processes the packet remodifies the packet header by incrementing the counter for the packet*]

Art Unit: 2664

*Coden, explicitly fails to disclose of one of the address table being a layer three IP lookup tables.*

Breyer discloses of Layer 3 switches on page 187, which are also known as routing switches or switch routers among other names. Breyer discloses on **page 193, fig. 5.17**, that upon receiving a frame, the switch having routing features strips off the layer 2 header to obtain a layer 3 packet, identifies IP protocol and **performs an address resolution lookup based on a layer 3 IP lookup table to find the egress port**. Breyer further discloses in the respective figure that upon determining location of the port, the header of the packet is modified to change the IP address and add back layer 2 header using routing table MAC addresses and then forwarding the packet to the (egress) port.

Therefore, it would have been obvious to one of ordinary skills in the art to modify the teachings of Coden's invention to include the teachings of the layer 3 switches configurable to perform layer 3 IP lookup tables as taught by Breyer. **One is motivated as such in order to route IP protocol and forward frames at wire speed rates such as 10, 100 or 1000Mbps with minimal latencies** (*Breyer, page 194*).

Regarding claims 2 and 7, Coden discloses in **col. 9, lines 35-45**, wherein said step of modifying the header of said incoming packet comprises adding or removing a stack tag to or from said header to be evaluated by said particular switch [as disclosed in **col. 9, lines 35-45**, an **identification number for the ring is added to the packet when packets are received at the ring interface of a ring switch**, *Note further: col. 9, lines 45-53 clearly discloses that a counter is appended to the packet at its originating ring switch, each subsequent ring switch in*

Art Unit: 2664

*the network that processes the packet by incrementing the counter for the packet establishing that adding/incrementing the counter tag to the header of the packet is evaluated by a particular switch ].*

7. Claims 3 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Coden in view of Breyer et al., hereinafter referred as Breyer as applied to claims 1, 2, 6 and 7 above, and further in view of Jennings et al. (U.S. Patent No. 6,425,015), hereinafter referred as Jennings.

Regarding claims 3 and 8, Coden in view of Breyer discloses all the limitations with respect to claims 1 and 6 except the steps of: (means) resolving a mirroring field of said incoming data packet, (means) forwarding said incoming data packet to a mirroring port based on said mirroring.

Jennings discloses in col. 3, lines 33-39 of Port mirroring achieved between ports on separate devices in a stack (series) of communication devices. Jennings discloses in fig. 2A of the formation of a data packet with Ethernet protocol including DA (destination address) and SA (source address), which identify the intended destination of the packet and its originator.

**Jennings clearly discloses in fig. 2B of adding an extra field RAP (roving analysis port bit) to each communication packet transmitted via the cascade. A control means 216 within the communication device (such as a switch) controls the adding and removing of the RAP field from each incoming packet indicating resolving a mirror field of the incoming data packet. Jennings discloses in col. 6, lines 9-15 of using the additional field to indicate that a cascade received packet is to be sent/forwarded to the mirror port.**



Art Unit: 2664

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Coden in view of Breyer to include the limitation of inserting a mirror field within the header of an incoming packet and forwarding the received packet to a mirror port as taught by Jennings. **One is motivated as implementing such in order to monitor traffic (such as volume of traffic on specific port or actual activities of a user of a particular port) passing through specific port or ports in the network** (*Jennings, col. 2, lines 3-14*).

*Allowable Subject Matter*

8. Claims 4-5 allowed.

Regarding claim 4, Prior Art fails to disclose wherein the first data port interface is configured to communicate with a second switch at the first data rate and the second data rate interface is configured to communicate with a third switch at the second data rate and the switch is configured to resolve a stack tag from a header of incoming data packet and forwards the incoming data packet to one of the second and third switches based on the resolved stack tag in combination with other limitations set forth in the respective claim.

*Conclusion*

**Any response to this action should be mailed to:**

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**Or faxed to:**

(703)305-3988, (for formal communications intended for entry)

Art Unit: 2664

**Or:**

(703)305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

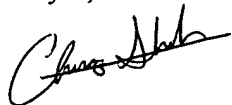
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 6:45 to 4:15, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs

May 5, 2005



Chirag Shah